

CLAIMS

We claim:

- 1 1. A device for collecting semen received from a glans penis of a male
2 human individual, said device comprising:
 - 3 a chamber, said chamber comprising a distal end, a proximal end, and a
4 conduit extending between said distal end and proximal end;
 - 5 said proximal end having a rim defining an aperture;
 - 6 said distal end having a surface that encloses said conduit;
 - 7 at least a portion of said conduit proximal to said proximal end having a
8 tapered shape radially inward defining a tapered section, whereby said tapered section
9 accommodates the head of the glans penis; and
 - 10 at least a portion of said conduit proximal to said distal end adapted for
11 receiving the semen ejaculated from the glans penis, said receiving portion defining a
12 reservoir section for the semen.
- 1 2. The device of claim 1, wherein said tapered accommodation section is
2 configured to the general external image of the head of the glans penis.
- 1 3. The device of claim 1, wherein said tapered accommodation section is
2 configured to prevent loss of any fractions of semen during ejaculation.
- 1 4. The device of claim 1, wherein said reservoir section is configured to
2 prevent loss of any fractions of semen during ejaculation.
- 1 5. The device of claim 1, wherein said tapered accommodation section
2 and said reservoir section are configured to prevent loss of any fractions of semen
3 during ejaculation.
- 1 6. The device of claim 1, wherein said enclosure surface is adapted to
2 allow said chamber to stand upward on a surface.

1 7. The device of claim 1, wherein said enclosure surface is at least
2 substantially flat.

1 8. The device of claim 1, wherein the longest cross-section of said
2 reservoir section is equal to or less than the shortest cross-section of the tapered
3 accommodation section.

1 9. The device of claim 8, wherein said enclosure surface is adapted to
2 allow said chamber to stand upward on a surface.

1 10. The device of claim 9, wherein said enclosure surface is at least
2 substantially flat.

1 11. The device of claim 1, wherein the longest cross-section of said
2 reservoir section is greater than the shortest cross-section of the tapered
3 accommodation section.

1 12. The device of claim 11, wherein said enclosure surface is adapted to
2 allow said chamber to stand upward on a surface.

1 13. The device of claim 12, wherein said enclosure surface is at least
2 substantially flat.

1 14. The device of claim 1, further comprising:
2 at least one protruding member disposed on said chamber, said protruding
3 member adapted to allow said chamber to stand upward on a surface.

1 15. The device of claim 14, wherein said protruding member comprises at
2 least one leg.

1 16. The device of claim 14, wherein said protruding member comprises a
2 collar surrounding at least a portion of said chamber.

1 17. The device of claim 14, wherein the longest cross-section of said
2 reservoir section is equal to or less than the shortest cross-section of the tapered
3 accommodation section.

1 18. The device of claim 14, wherein the longest cross-section of said
2 reservoir section is greater than the shortest cross-section of the tapered
3 accommodation section.

1 19. The device of claim 1, wherein said tapered accommodation section is
2 bell-shaped.

1 20. The device of claim 1, wherein said tapered accommodation section is
2 olive-shaped.

1 21. The device of claim 1, wherein said tapered accommodation section is
2 hemispherical-shaped.

1 22. The device of claim 1, wherein said tapered accommodation section is
2 ellipsoid-shaped.

1 23. The device of claim 1, wherein said tapered accommodation section is
2 multifaceted-shaped.

1 24. The device of claim 1, wherein said tapered accommodation section is
2 cone-shaped.

1 25. The device of claim 1, wherein said tapered accommodation section
2 comprises at least one wall, wherein said at least one wall comprises a shape selected
3 from the group consisting of curved, multicurved, sloped, multifaceted, beveled,
4 sloped, and chamfered.

1 26. The device of claim 1, further comprising a cover disposed on said

2 chamber.

1 27. The device of claim 1, further comprising a cover disposed on said
2 device.

1 28. The device of claim 1, further comprising a tracking medium disposed
2 on said chamber.

1 29. The device of claim 28, wherein said a tracking medium comprises at
2 least one of frosted surface or bar code label.

1 30. The device of claim 1, further comprising a volume identification
2 medium disposed on said chamber.

1 31. The device of claim 30, wherein said a volume identification medium
2 comprises at least one graduated mark or a calibrated region adapted for indicating
3 volume.

1 32. The device of claim 1, wherein said device is used for an application
2 selected from the group consisting of hospitals, clinics, semen analysis laboratories,
3 fertility and infertility diagnostic laboratories, IVF clinics, ICSI clinics, artificial
4 insemination clinics, vasectomy clinics, andrology research laboratories, basic
5 research laboratories, forensic (crime) laboratories and law enforcement agencies,
6 prisons, home sperm test users, and environmental monitoring for effect of toxins on
7 spermatogenesis in occupations such as mining, agriculture, radiation exposure, and
8 industries.

1 33. The device of claim 1, further comprising a port disposed on said
2 reservoir section to allow for drainage or removal of the semen.

1 34. The device of claim 1, further comprising a port disposed on said
2 reservoir section to allow for access or communication to the semen.

- 1 35. The device of claim 1, wherein said chamber is integrally formed.
- 1 36. The device of claim 1, wherein said device is integrally formed.
- 1 37. The device of claim 1, wherein said chamber is partially integrally formed.
- 1 38. The device of claim 1, wherein said device is partially integrally formed.
- 1 39. The device of any one of claims 37 and 38, wherein said tapered accommodation section and said reservoir section are attachable to one another and/or detachable from one another.
- 1 40. The device of claim 1, further comprising an adapter section.
- 1 41. The device of claim 40, further comprising at least one handle disposed on said device.
- 1 42. The device of claim 41, wherein said handle comprise at least one of tab, ridge, strap, knob, protrusion, or lever.
- 1 43. The device of claim 40, further comprising at least one grip ridge disposed on said device.
- 1 44. The device of claim 40, wherein said adapter section comprises a collar.
- 1 45. The device of claim 44, wherein said adapter section is configured to accommodate the glans penis.

1 46. The device of claim 44, wherein said collar comprises at least one of
2 lubricant, jacket or lining.

1 47. The device of claim 40, wherein said adapter section comprises an
2 ejaculation aid device.

1 48. The device of claim 40, wherein said adapter section comprises a
2 stimulation device for stimulating the glans.

1 49. The device of claim 40, wherein said adapter section is adapted for
2 being held by the individual or a partner.

1 50. The device of claim 1, wherein said reservoir section at least partially
2 comprises at least one communication channel.

1 51. The device of claim 50, wherein said at least one communication
2 channel comprises at least one of channel, microchannel, capillary tube, microtubing,
3 tubing, pipette, micropipette, or column.

1 52. The device of claim 1, further comprising a port disposed on said
2 collection device.

1 53. The device of claim 52, wherein said port is in communication with at
2 least one communication channel.

1 54. The device of claim 53, wherein said at least one communication
2 channel comprises at least one of channel, microchannel, capillary tube, microtubing,
3 tubing, pipette, micropipette or column.

1 55. The device of claim 1, further comprising at least one handle disposed
2 on said device.

1 56. The device of claim 55, wherein said handle comprise at least one of
2 tab, ridge, strap, knob, protrusion, or lever.

1 57. The device of claim 1, further comprising at least one grip ridge
2 disposed on said device.

1 58. A method for collecting semen received from a glans penis of a male
2 human individual during ejaculation, said method comprising:

3 placing a semen collecting device in contact with the glans head of the
4 individual; and

5 receiving semen produced from the ejaculation in said semen collecting
6 device.

1 59. The method of claim 58, wherein said collection device comprises:
2 a chamber, said chamber comprising a distal end, a proximal end, and a
3 conduit extending between said distal end and proximal end;
4 said proximal end having a rim defining an aperture;
5 said distal end having a surface that encloses said conduit;
6 at least a portion of said conduit proximal to said proximal end having a
7 tapered shape radially inward defining a tapered section, whereby said tapered section
8 accommodates the head of the glans penis; and
9 at least a portion of said conduit proximal to said distal end adapted for
10 receiving the semen ejaculated from the glans penis, said receiving portion defining a
11 reservoir section for the semen.

1 60. The method of claim 59, wherein the said contact of the glans head
2 with said collection device is at least partially in contact with said tapered
3 accommodation section.

1 61. The method of claim 59, wherein the said contact of the glans head
2 with said collection device is solely in contact with said tapered accommodation

3 section.

1 62. The method of claim 59, wherein said tapered accommodation section
2 is bell-shaped.

1 63. The method of claim 59, wherein said tapered accommodation section
2 is olive-shaped.

1 64. The method of claim 59, wherein said tapered accommodation section
2 is hemispherical-shaped.

1 65. The method of claim 59, wherein said tapered accommodation section
2 is ellipsoid-shaped.

1 66. The method of claim 59, wherein said tapered accommodation section
2 is multifaceted-shaped.

1 67. The method of claim 59, wherein said tapered accommodation section
2 is cone-shaped.

1 68. The method of claim 59, wherein the placement prevents loss of any
2 fractions of semen during ejaculation.

1 69. The method of claim 59, wherein said tapered accommodation section
2 is configured to the general external image of the head of the glans penis.

1 70. The method of claim 59, wherein the placement includes aligning the
2 urethra of the glans penis with said reservoir section.

1 71. The method of claim 59, wherein the placement includes aligning the
2 urethra of the glans penis with said tapered accommodation section.

1 72. The method of claim 59, wherein the placement includes aligning the
2 urethra of the glans penis with both said reservoir section and said tapered
3 accommodation section.

1 73. The method of claim 58, wherein the placement prevents loss of any
2 fractions of semen during ejaculation.

1 74. A test kit for analyzing the semen collected in claim 58, comprising:
2 a surface on which the semen sample collected in said device can be
3 deposited; and
4 a means for analyzing the semen sample deposited on said surface.

1 75. The test kit of claim 74, wherein said means for analyzing the semen
2 sample determines at least one of: presence of sperm; concentration of sperm;
3 condition of sperm, quality of sperm, sperm count, sperm morphology, sperm
4 motility, or sperm viability and markers of accessory sex gland secretion.

1 76. A test kit for analyzing the semen collected in claim 58, comprising:
2 a surface on which the semen sample collected in said device can be
3 deposited;
4 an antibody specific for a testes and sperm tissue-specific protein antigen
5 present throughout spermiogenesis; and
6 a means for indicating binding of said monoclonal antibody to antigen present
7 the semen sample deposited on said surface.

1 77. A test kit for analyzing the semen collected in claim 58, comprising:
2 a communication channel on which the semen sample collected in said device
3 can be received; and
4 a means for analyzing the semen sample received from said communication
5 channel.

1 78. A test kit for analyzing the semen collected in claim 1, comprising:

2 a surface on which the semen sample collected in said device can be
3 deposited; and

4 a means for analyzing the semen sample deposited on said surface.

1 79. The test kit of claim 78, wherein said means for analyzing the semen
2 sample determines at least one of: presence of sperm; concentration of sperm;
3 condition of sperm or quality of sperm.

1 80. A test kit for analyzing the semen collected in claim 1, comprising:
2 a surface on which the semen sample collected in said device can be
3 deposited;
4 an antibody specific for a testes and sperm tissue-specific protein antigen
5 present throughout spermiogenesis; and
6 a means for indicating binding of said monoclonal antibody to antigen present
7 the semen sample deposited on said surface.

1 81. A test kit for analyzing the semen collected in claim 1, wherein said
2 reservoir section at least partially comprises at least one communication channel,
3 wherein semen sample collected in said device can be received; and
4 a means for analyzing the semen sample received from said communication
5 channel.

1 82. The device of claim 1, further comprising a port disposed on said
2 collection device.

1 83. A test kit for analyzing the semen collected in claim 82, further
2 comprising:
3 at least one communication channel in communication with said port, wherein
4 semen sample collected in said device can be received via said port; and
5 a means for analyzing the semen sample received from said communication
6 channel.

1 84. A method for analyzing the semen collected in claim 58, comprising:
2 providing a surface;
3 depositing the semen sample collected in said device on said surface; and
4 analyzing the semen sample deposited on said surface.

1 85. The method of claim 84, wherein said analyzing of the semen sample
2 comprises at least one of determining the presence of sperm; determining the
3 concentration of sperm; determining the condition of sperm or determining the quality
4 of sperm.

1 86. The method for analyzing the semen collected in claim 58, comprising:
2 providing a surface;
3 depositing the semen sample collected in said device on said surface;
4 providing an antibody specific for a testes and sperm tissue-specific protein
5 antigen present throughout spermiogenesis; and
6 indicating binding of said monoclonal antibody to antigen present the semen
7 sample deposited on said surface.

1 87. A method for analyzing the semen collected in claim 1, comprising:
2 providing a surface;
3 depositing the semen sample collected in said device on said surface; and
4 analyzing the semen sample deposited on said surface.

1 88. The method of claim 87, wherein said analyzing of the semen sample
2 comprises at least one of determining the presence of sperm; determining the
3 concentration of sperm; determining the condition of sperm or determining the quality
4 of sperm.

1 89. The method of claim 1, comprising:
2 providing a surface;
3 depositing the semen sample collected in said device on said surface;

- 4 providing an antibody specific for a testes and sperm tissue-specific protein
- 5 antigen present throughout spermiogenesis; and
- 6 indicating binding of said monoclonal antibody to antigen present the semen
- 7 sample deposited on said surface.